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THE TWENTY-FIRST ANNUAL INTENSIVE CREEL CENSUS, HUNT CREEK TROUT RESEARCH STATION, 1959 TROUT SEASON

By

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The experimental waters of the Hunt Creek Trout Research Station (Fig. 1) are located on the headwaters of the Hunt Creek drainage in south-central Montmorency County. Hunt Creek is one of the major tributaries of the Thunder Bay River drainage, is approximately 10 miles long, and is regarded as good to excellent brook trout water.

Angling on the experimental stream sections and ponds was intensively censused during 1959 for the twenty-first consecutive year. These waters were Hunt Creek, Fuller Creek, Fuller Creek Pond, and East Fish Lake. The morphometry and fishing regulations applying to the various experimental subdivisions are given in Table 1.

Creel census methods

Each angler fishing the posted waters is required to obtain a free daily permit from the centrally-located Departmental office. Upon completion of his trip he must return the permit to the checking station and allow inspection of his catch. Various data secured from the angler and by inspection of his catch are tabulated by stream section, pond, or lake, in this report.

MICHIGAN DEPARTMENT OF CONSERVATION
FISH DIVISION

HUNT CREEK FISHERIES EXPERIMENTAL AREA

MONTMORENCY COUNTY

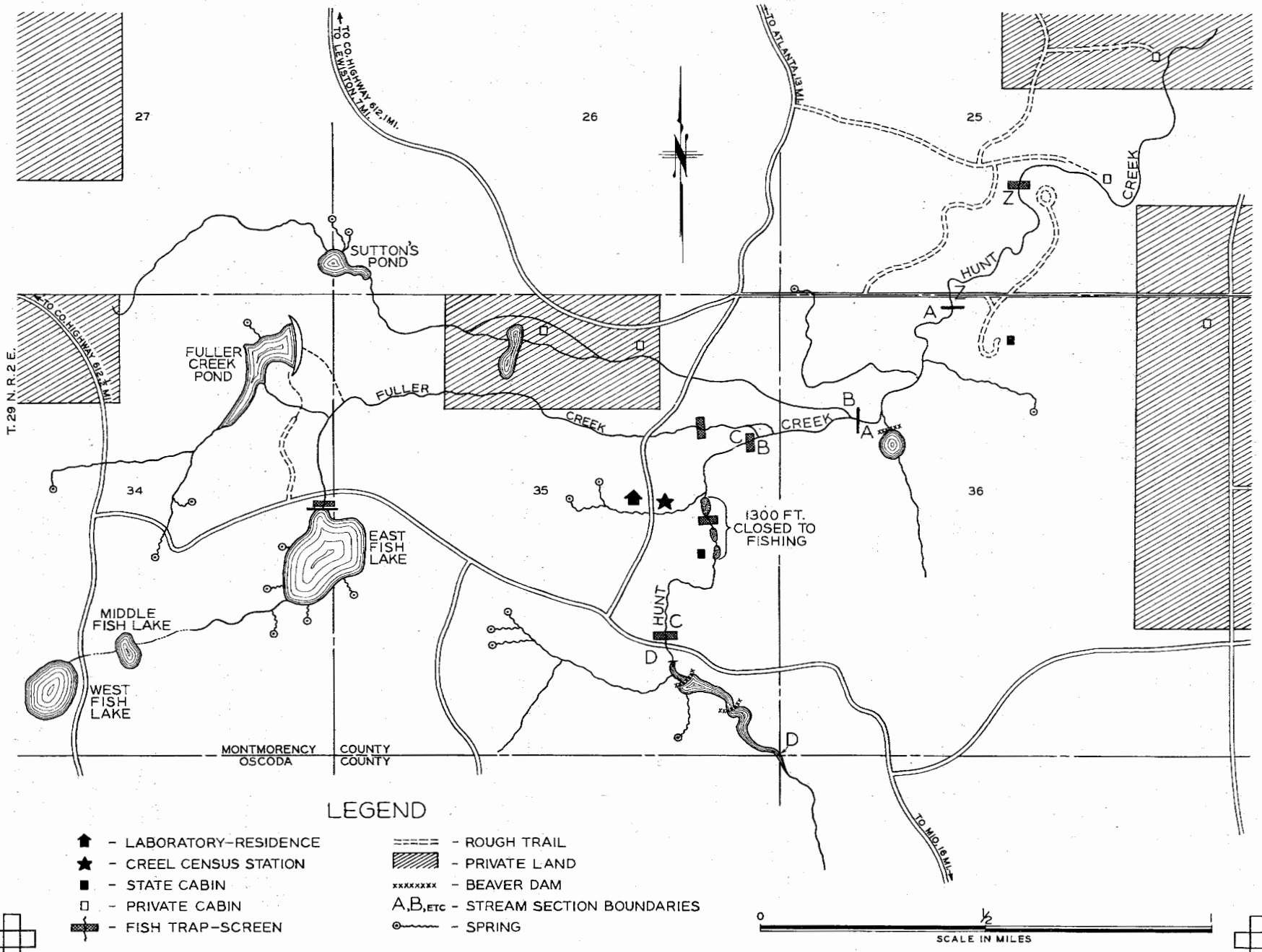

Figure 1

HUNT CREEK FISHERIES EXPERIMENTAL AREA

OBJECTIVE -- The Hunt Creek Fisheries Experiment Station was established in 1939 as a year-round testing ground and outdoor research laboratory where trained biologists might study brook trout and the effects of angling on a typical brook trout stream. The Hunt Creek drainage was chosen because of availability of state-owned stream frontage and also because of the variety of brook trout habitats present in the area.

State ownership has made possible various experimental restrictions and management procedures not otherwise feasible.

The purpose of the investigations is to find out by observation or by controlled experiments what methods of stream management will increase the quality of the brook trout angling and also preserve the species for the enjoyment of future anglers.

THE ANGLERS' PART IN OUR RESEARCH -- The best measure of an experimental procedure in trout stream management is how it affects the anglers' catch. Therefore, registration of anglers and collection of creel census records constitute an important part of the work each year. Such records provide a measure of the effects of changes in size and creel limits, and, in connection with marking experiments and year-round population estimates, reveal origin and movements of trout within the system. Creel census records compared with population estimates correspond to sales records compared with production schedules in industry.

RESEARCH HERE DURING THE LAST TEN YEARS -- has indicated that:

(1) Natural reproduction is more than adequate in Hunt Creek;
(2) Fall plantings of hatchery-reared brook trout fingerlings contribute less than 3% to the anglers' catches in subsequent years;
(3) Stream improvement, properly carried out, can improve the quality of angling.
(4) Tributary streams are not an important source of adult fish for main stream angling;
(5) In the proper type of lake good brook trout fishing can be created by the elimination of rough fish populations.

Some of the other accomplishments of the station include detailed food studies of the brook trout by Dr. J. W. Leonard, who also identified new species of trout stream insects not previously described; an exhaustive study of the use of brook trout scales in age and growth studies of Michigan brook trout by Dr. E. L. Cooper; and the development by the past and present staff of the electric shocker as a substitute for seines in trout population investigations.

CURRENT INVESTIGATIONS -- include further study of brook trout movements in the main stream through the use of the recently-installed upper and lower screens, detailed year-round population studies on the brook trout population between these traps, trout lake and beaver pond population studies by means of netting, marking and recovery, and investigations of the effect of beaver dams on the fishing in dammed portions of trout streams.

REGULATIONS -- Except for about 1,300 feet of stream in Section C of Hunt Creek, all the waters on the map on the reverse of this sheet are open to angling. The posted waters, marked by Departmental signs, are open to angling under the following restrictions set by the Conservation Commission:

(1) Each angler must first obtain at the checking station a daily free-use permit before fishing.
(2) Each angler must report the results of his fishing at the checking station on conclusion of his angling.
(3) Special regulations are to be observed in certain waters and such waters will be posted with appropriate signs. Otherwise the usual regulations for other waters of the state are in effect on the Hunt Creek Area.

SUMMARY, ANGLING STATISTICS, EXPERIMENTAL SECTIONS, HUNT CREEK, 1939-1949

	YEAR										
	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
TOTAL ANGLER-DAYS.....	438	505	1,015	800	311	340	375	753	607	504	593
TOTAL HOURS FISHED.....	780	901	1,546	1,267	540	640	637	1,206	872	869	1,415
LEGAL BROOK TROUT TAKEN.	492	406	722	543	378	364	315	439	187	492	698
TOTAL POUNDS REMOVED....	67	60	116	83	59	53	52	68	26	78	115
CATCH PER HOUR.....	0.63	0.45	0.47	0.43	0.70	0.57	0.49	0.36	0.21	0.57	0.49
AVERAGE TOTAL LENGTH....	7.5	7.6	7.7	7.6	7.5	7.7	7.9	7.7	7.6	7.7	7.8

SUMMARY, ANGLING STATISTICS, EAST FISH LAKE, 1939-1949

	YEAR										
	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
TOTAL ANGLER-DAYS.....	63	111	155	159	121	311	436	430	344	287	283
TOTAL HOURS FISHED.....	126	308	386	289	200	651	928	935	711	853	1,024
LEGAL BROOK TROUT TAKEN.	51	172	242	367	69	108	169	93	89	117	91
TOTAL POUNDS REMOVED....	--	28	47	97	26	79	131	69	54	55	70
CATCH PER HOUR.....	0.41	0.56	0.63	1.26	0.29	0.17	0.18	0.10	0.13	0.14	0.09
AVERAGE TOTAL LENGTH....	--	8.0	8.5	9.0	9.3	11.2	11.9	11.5	11.1	10.4	11.6

Table 1.--Morphometry (mileage in parentheses) of experimental waters of Hunt Creek drainage, with angling regulations for 1959

Experimental water Section of Hunt Creek	Dimensions			1959 Regulations		
	Length (feet)	Average width (feet)	Area (acres)	Lure	Minimum length (inches)	Daily creel limit
Z	2,397 (0.45)	20.3	1.12	Flies only	7	10
A	2,577 (0.49)	24.3	1.44	Flies only	7	10
B	1,605 (0.30)	17.5	0.64	Any	7	10
C[1]	2,700 (0.51)	11.8	0.71	Any	7	10
D	2,896 (0.55)	100.0	6.65	Any	7	10
Total, Hunt Creek	12,175 (2.30)	37.8	10.56			
Fuller Creek	9,875 (1.87)	15.7	3.57	Any	7	10
Fuller Creek Pond	...	...	14.58	No live fish	10	5
East Fish Lake	...	...	16.0	No minnows	10	5

[1] Excludes 1,270 feet of Section C which are experimental diversions closed to fishing.

During the 1959 trout season, 986 permits were issued to individuals who made 1,289 angling trips. An angler trip results whenever an angler fishes one of the designated stream sections or ponds on the area, thus one individual will be listed as making more than one trip on any particular date when he fishes more than one stream section or pond.

Male licensees constituted 77 percent of the anglers; female licensees made up one percent; wives, 6 percent; minor males, 14 percent, and minor females, 2 percent.

Recovery of planted trout

Table 2 summarizes results from plants in 1957 and 1958 of hatchery trout in Fuller Creek Pond and East Fish Lake, and two groups of wild fingerling brook trout transferred to Section D Pond in 1958. During the 1959 season 311 "planted" trout were caught by anglers. Of these 294 were of hatchery origin, and 17 were wild trout.

Five of 300 7- to 9-inch brook trout planted in Fuller Creek Pond in October, 1957 were caught in 1959. These, along with the 33 creeled in 1958 bring the recovery percentage to 12.7. Four (11 percent) of the 38 recoveries were made in Fuller Creek below the pond. Evaluation of results from plants in Fuller Creek Pond are difficult because of this escapement, especially since regulations on Fuller Creek differ from those in effect on Fuller Creek Pond. Plans are being formulated to install a fish barrier and water level control structure in the Fuller Creek Pond embankment which will eliminate the difficulties.

Four brook trout from a release of 2,000 6- to 9-inch fish in East Fish Lake in June, 1957, were creeled in 1959. These and the 119 caught in 1958 constitute a return of 123 (6.2 percent) from this plant.

Table 2.--Harvest by anglers of trout released in the experimental waters of Hunt Creek in 1957 and 1958

Area and date of planting	Trout planted			Length when planted (inches)	Legal trout creeled		Total legal trout creeled to date	
	Number	Species	Origin		1958	1959	Number	Percentage
Fuller Creek Pond								
October, 1957	300	Brook	Hatchery	7-9	33[1]	5[1]	38	12.7
East Fish Lake								
June, 1957	2,000	Brook	Hatchery	6-9	119	4	123	6.2
October, 1958	300	Brook	Hatchery	8.5-9.5	...	88	88	29.3
October, 1958	300	Rainbow	Hatchery	8.5-9.5	...	197	197	65.7
Section D Pond								
April, 1958	110	Brook	Wild	2.6-3.6	1	14[2]	15	13.6
October, 1958	200	Brook	Wild	2.5-4.0	...	3	3	1.5
Total	3,210				153	311	464	14.5

[1] Three trout of 33 creeled in 1958 and 1 of 5 in 1959 were recovered from Fuller Creek.

[2] One trout of 14 creeled in 1959 was recovered from Section D stream.

On October 15, 1958, 600 hatchery trout (300 brook, 300 rainbow) averaging 8.9 inches in length were released in East Fish Lake. In the 1959 season anglers caught 88 (29 percent) of the brook trout and 197 (66 percent) of the rainbows. The average size of the brook trout was 11.0 inches and 0.52 pound, whereas the rainbow trout averaged 13.2 inches in total length and 0.95 pound in weight. I. F. R. Report No. 1594 gives a detailed analysis of the planting, survival and 1959 catch of these groups of fish.

In addition to the hatchery trout released in the experimental waters of the Area two groups of wild fingerling brook trout were transferred to Section D Pond. The first group of 110 (size range, 2.6-3.6 inches) was released in the pond in April, 1958. From this group, 15 (1 in 1958, 14 in 1959) have been creeled for a recovery percentage of 13.6. This recovery fraction is good, considering the size of the trout at the time of release. The second group of 200 (size range, 2.5-4.0 inches) was released in October, 1958. Through 1959 only 3 of these have been caught by anglers for a recovery percentage of 1.5. Most of these failed to grow to legal size during the 1959 trout season. Both groups of trout were transferred from the experimental diversions in Section C of Hunt Creek.

Of 3,210 trout, hatchery and wild, "planted" in Area waters in 1957 and 1958, 464 (14.5 percent) were caught by anglers by the end of the 1959 trout season. Of these, 446 were hatchery trout and 18 were of wild origin.

Angling results

The main statistics for the various waters of the Hunt Creek drainage on which the station has jurisdiction are given in Table 3 along with the combined totals. Descriptions of the physical characteristics of these areas are to be found in numerous earlier reports. In general, Sections Z and A, the lowermost stream sections, are wider, deeper, and more open than Sections B, C, and Fuller

Table 3.--Summary of angling data, experimental waters of Hunt Creek drainage, 1959

Experimental water	Total fishing		Total catch				Catch per hour[2]		Average size	
	Trips[1]	Hours	Species of trout	Origin	Number	Pounds	Number	Pound	Total length (inches)	Weight (pound)
Section of Hunt Creek:										
Z	197(41)	197.0	Brook	Wild	118	16.69	0.60	0.08	7.5	0.141
			Rainbow	Wild	1	0.33	Tr	Tr	9.6	0.330
			All		119	17.02	0.60	0.09	7.5	0.143
A	96(41)	208.0	Brook	Wild	123	17.86	0.59	0.09	7.5	0.153
B	84(40)	129.5	Brook	Wild	59	9.14	0.46	0.07	7.8	0.155
C	226(35)	428.0	Brook	Wild	166	26.88	0.39	0.06	7.7	0.162
			Rainbow	Wild	5	1.71	0.01	Tr	9.6	0.342
			All		171	28.59	0.40	0.07	7.7	0.167
D stream	96(15)	144.5	Brook	Wild	28	5.09	0.19	0.04	7.9	0.167
D pond	88(26)	149.5	Brook	Wild	57	22.16	0.38	0.15	9.6	0.389
Total Hunt Creek	687(33)	1256.5	Brook	Wild	551	97.82	0.44	0.08	7.8	0.178
			Rainbow	Wild	6	2.04	Tr	Tr	9.6	0.340
			All		557	99.86	0.45	0.08	7.8	0.179
Fuller Creek	126(33)	233.5	Brook	Wild	70	10.95	0.30	0.05	7.6	0.156
			Brook	Hatchery	1	0.33	Tr	Tr	9.4	0.325
			All		71	11.28	0.30	0.05	7.6	0.159
Fuller Creek Pond	80(39)	236.5	Brook	Wild	68	28.95	0.29	0.12	10.5	0.426
			Brook	Hatchery	4	1.91	0.01	0.01	10.8	0.478
			All		72	30.86	0.30	0.13	10.6	0.429
East Fish Lake	396(34)	1204.5	Brook	Wild	4	3.13	Tr	Tr	12.0	0.783
			Brook	Hatchery	92	49.69	0.08	0.04	11.1	0.540
			Rainbow	Hatchery	197	187.55	0.16	0.16	13.2	0.952
			All		293	240.37	0.24	0.20	12.5	0.820
All waters	1289(34)	2931.0	Brook	Wild	693	140.85	0.24	0.05	8.1	0.203
			Brook	Hatchery	97	51.93	0.03	0.02	11.1	0.535
			Rainbow	Wild	6	2.04	Tr	Tr	9.6	0.340
			Rainbow	Hatchery	197	187.55	0.07	0.06	13.2	0.952
			All		993	382.37	0.34	0.13	9.4	0.385

[1] Percentage of successful fishing trips in parentheses.

[2] Tr (trace) indicates value less than 0.005.

Creek. Section D of Hunt Creek has a short natural stream channel of about 200 yards, above which it is occupied by a beaver pond of about 7 acres. Fuller Creek Pond on the headwaters of Fuller Creek is maintained by an earthen dam on the site of a former beaver dam. East Fish Lake, also in this drainage, is a small deep trout lake, whose outlet is blocked by a low earthen dam, in which a Wolf-type fish trap effectively blocks fish migration.

The 1959 trout season was the last of five trout seasons during which Sections Z and A were fished under a "flies only" regulation. A separate report will summarize the results of the flies-only study in the near future.

At East Fish Lake and Fuller Creek Pond a minimum size limit of 10 inches and a creel limit of five trout daily, was imposed. All other waters on the area are fished under the usual regulations on Michigan trout streams.

In 1959 anglers on Section Z creeled 119 legal trout (17 pounds) in 97 trips, at the average rate of 0.60 trout per hour. The trout averaged 7.5 inches in total length. Forty-one percent of the anglers were successful, catching one or more legal trout per trip. The catch per hour of trout was slightly below the rate recorded for 1958. Two sublegal trout were creeled and 885 sublegal trout were reported caught and returned to the water.

A population study[1] made in October, 1959 indicated that approximately 263 legal and 1,190 sublegal wild brook trout remained in Section Z at the close of the 1959 trout season. There were 387 percent more legals and 18 percent fewer sublegals remaining than in 1958, although fishing pressure (hours) increased about 12 percent over the previous year.

Anglers creeled 123 wild brook trout (18 pounds) from Section A in 208 hours of fishing for an average catch per hour of 0.59 trout. Anglers made 96 trips and were successful on 41 percent of them. Four sublegal trout were creeled and 987 were reported as hooked and released in Section A. Fishing

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[1] Made by the mark-and-recapture method with the aid of direct-current electrofishing gear.

pressure and catch were both higher than during 1958, but the catch per hour was lower.

An estimated population of 280 legal and 2,331 sublegal wild brook trout remained in Section A at the close of the season. The legal population was 289 percent higher and the sublegal population was slightly lower in comparison with 1958. These findings are similar to those recorded for Section Z. Even though the fishing was more intensive than in 1958 the legal population had increased and the numbers of sublegal trout had decreased slightly.

Section B, upstream from Section A, yielded 59 wild brook trout (weight, 9 pounds) to anglers. They caught 0.46 trout per hour that averaged 7.8 inches long. Anglers made 84 trips to Section B and were successful on 40 percent of them. Fishermen reported catching and releasing 646 sublegal trout. Postseason population estimates indicated that 99 legal brook trout and 1,349 sublegal brook trout remained in Section B after the end of the season. This represents an increase among legal brook trout of 125 percent; an increase in the sublegal population of about 5 percent, when compared with 1958 estimates.

Anglers harvested 171 trout (29 pounds) in 226 trips from Section C. The average catch per hour was 0.40 trout; the fish averaged 7.7 inches in length. Thirty-five percent of the trips to Section C were successful. Eight sublegal trout were creeled, and 1,495 sublegal trout were reported caught and returned to the water. The fall population study provided estimates of 32 legal and 1,682 sublegal brook trout remaining at the close of the 1959 trout season. The legal population was down slightly; the sublegal population was down about 34 percent in comparison with 1958 fall population figures.

Section D, the uppermost section on Hunt Creek has both stream and beaver pond habitat. In 1959 there were 96 trips to the short stream portion (about 200 yards), and these anglers creeled 28 brook trout (5 pounds). Anglers caught 0.19

trout per hour and were successful on 15 percent of their trips. Trout creeled averaged 7.9 inches long. Fishing pressure and catch were considerably lower than during 1958.

The upper portion of Section D is a beaver pond of approximately 7 acres. In 88 trips to the pond, anglers caught 57 brook trout (22 pounds) that averaged 9.6 inches long. Anglers were successful on twenty-six percent of their trips and they caught trout at the rate of 0.38 fish per hour. As in the stream portion of Section D, the catch and fishing pressure were considerably lower than in 1958. This drop is believed to have resulted from a meager stock of trout in the pond (caused by a decreased amount of natural reproduction), or a direct loss of fish from Section D when the beaver dam failed in May, 1959. Section D beaver pond yielded the best brook trout from the area during 1959--a wild specimen measuring 16.6 inches and weighing 2 pounds, 2 ounces.

For Hunt Creek as a whole, 551 wild brook trout were creeled in 1959, a reduction of 133 (19 percent) from 1958. In addition, 6 wild rainbow trout were taken, for a total of 557 wild fish. The total weight of trout creeled was 100 pounds, some 40 pounds less than the 1958 catch. Most of this reduction took place in Section D.

Angling results during the ten biweekly periods of the 1959 trout season at Hunt Creek are summarized in Table 4. During the first three periods anglers harvested about twice as many trout per period as they did in later ones. Numbers of trout harvested varied between 79-105 for the first three periods whereas catches ranged between 32 and 51 for the last seven fortnights. The opening weekend and the legal holidays drew the heaviest angler pressure. Fisherman hours on the stream ranged from a high of 222 hours during the opening two weeks to a low of 66 hours during the fourth two-week period. Trout averaged about 0.4 inches longer during the last half of the season than during the first five weeks.

Table 4.--Biweekly angling statistics for wild brook trout, Sections Z, A, B, C and D of Hunt Creek (combined), 1959

Period	Date	Total fishing		Wild trout		Catch per hour		Total length (inches)	Weight (pound)
		Trips[1]	Hours	Number	Pounds	Number	Pound		
1	April 25-May 8	117 (33)	221.5	79	14.56	0.36	0.07	7.9	0.185
2	May 9-May 22	87 (39)	143.5	105	16.37	0.73	0.11	7.6	0.156
3	May 23-June 5	63 (33)	130.0	91	14.19	0.70	0.11	7.6	0.156
4	June 6-June 19	39 (16)	66.0	38	5.62	0.58	0.09	7.5	0.148
5	June 20-July 3	67 (18)	130.0	42	7.00	0.32	0.05	7.8	0.167
6	July 4-July 17	69 (17)	114.0	43	7.45	0.38	0.07	7.8	0.173
7	July 18-July 31	50 (14)	91.5	32	7.16	0.35	0.08	8.4	0.224
8	Aug. 1-Aug. 14	85 (25)	145.5	36	8.00	0.25	0.06	8.1	0.222
9	Aug. 15-Aug. 28	73 (20)	130.5	51	10.10	0.39	0.08	8.0	0.198
10	Aug. 29-Sept. 13	37 (13)	84.0	34	7.37	0.40	0.09	8.0	0.217
Total or average		687 (228)	1,256.5	551	97.82	0.44	0.08	7.8	0.185

[1] Number of successful trips in parentheses.

Fuller Creek

In 126 trips to Fuller Creek anglers creeled 70 wild and one hatchery brook trout; these trout weighed 11 pounds. The catch of wild fish was only one fish less than recorded in 1958. The trout averaged 7.6 inches long and were caught at the rate of 0.30 fish per hour. Thirty-three percent of the angler trips were successful (Table 3).

Fuller Creek Pond

This pond is presently maintained by an earthen dam. From the fall of 1956 to the fall of 1957 the pond was dry-fallowed by dropping the water level to the original channel. It was refilled in September of 1957 and stocked with 150 legal (10-13 inches) brook trout and 300 sublegal hatchery brook trout (7-9 inches) in October, 1957. No additional fish from the planting of legal-size trout were caught in 1959, but 5 fish from the 1957 plant of sublegal trout were creeled bringing the total recovery on the latter release to 12.7 percent.

Most of the trout in the 1959 catch in Fuller Pond were of wild origin. Anglers creeled 68 wild brook trout (29 pounds) in 80 trips; the average catch per hour was 0.12 fish, and these fish averaged 10.5 inches in total length.

East Fish Lake

This lake is a Designated Trout Lake, of approximately 16 acres and an average depth of 20 feet. The lake was treated with rotenone during the fall of 1956 to eradicate a rough fish population. In April of 1957, 350 legal hatchery brook trout were introduced (10-13 inches), and anglers removed 81 percent of these fish. In June, 1957, 2,000 sublegal (6-9 inches) were planted. During the 1958 season, 119 of these fish were taken, and during 1959 an additional 4 fish entered the catch, bringing the percentage of return to 6.2 (Table 2). This relatively poor return of brook trout to the creel, except for those planted

immediately prior to the season opening, prompted a comparative planting on October 15, 1958, composed of 300 brook trout and 300 rainbow trout (average size of both groups, 8.9 inches) in an attempt to determine what factors might be responsible for the poor returns for fall- and summer-planted brook trout.

During the 1959 trout season, anglers recovered 88 brook trout (46 pounds) and 197 rainbow trout (188 pounds) from this planting. In addition, four wild brook trout were caught (3 pounds) that averaged 12.0 inches long (Table 3). These were the first wild trout taken since the 1956 rotenone treatment, and presumably originated from the natural spawning of some of the survivors of planted hatchery stock, according to analysis of their scales.

In 1959, anglers spent 1,205 hours fishing East Fish Lake, an increase in pressure of 66 percent over 1958.

The distribution of the brook and rainbow trout catch during the season was quite different; the brook trout were harvested mainly during the first four weeks, while the rainbow trout were fairly well distributed among all two-week periods. This catch pattern for East Fish Lake apparently reflects the rather great difference in natural mortality between the species as well as their relative susceptibility to the anglers' lures.

All waters

From all experimental waters of the Area anglers creeled 993 trout (total weight, 382 pounds) in 1,289 trips involving 2,931 hours of angling (Table 3). The number of trout creeled increased 3 percent, whereas the weight of the harvest increased 62 percent over 1958; the latter is a direct result of the weight increase of the 1958 fall-planted rainbow trout caught from East Fish Lake.

Table 5 summarizes the 1939-1959 fishing statistics on Hunt Creek and Table 6 is a tabulation of Fuller Creek angling statistics for the period 1940-1959.

Table 5.--Legal wild brook trout caught in Hunt Creek, 1939-1959

Section and year	Total fishing		Total catch		Catch per hour		Average size	
	Trips	Hours	Number	Pounds	Number	Pound	Length (inches)	Weight (pound)
Section A, B, C and D								
1939	438	780	461	67	0.59	0.09	7.5	0.15
1940	505	901	406	60	0.45	0.07	7.6	0.15
1941	1,015	1,546	706	113	0.46	0.07	7.7	0.16
1942	808	1,267	532	83	0.42	0.07	7.6	0.16
1943	311	540	372	59	0.69	0.11	7.5	0.16
1944	340	640	337	53	0.53	0.08	7.7	0.16
1945	375	637	312	52	0.49	0.08	7.9	0.17
1946	753	1,206	434	68	0.36	0.06	7.6	0.16
1947	607	872	184	26	0.21	0.03	7.6	0.14
1948	504	869	476	78	0.55	0.09	7.7	0.16
1949	432	1,063	517	87	0.49	0.08	7.8	0.17
1950	369	915	415	75	0.45	0.08	8.0	0.18
1951	552	1,066	431	76	0.40	0.07	8.0	0.18
1952	488	1,195	556	103	0.47	0.09	8.0	0.19
1953	656	1,587	572	118	0.36	0.07	8.4	0.21
1954	748	1,649	483	88	0.29	0.05	8.0	0.19
1955	702	1,522	508	94	0.33	0.06	8.0	0.19
1956	704	1,245	585	104	0.47	0.08	7.8	0.19
1957	668	1,307	630	123	0.48	0.09	8.1	0.20
1958	701	1,257	583	121	0.46	0.10	8.2	0.21
1959	590	1,060	433	81	0.41	0.08	7.9	0.19
Section Z								
1949	165	375	186	28	0.50	0.07	7.6	0.15
1950	164	473	160	21	0.34	0.04	7.4	0.13
1951	129	322	124	18	0.39	0.06	7.5	0.14
1952	188	570	222	34	0.39	0.06	7.7	0.15
1953	225	566	183	27	0.32	0.05	7.6	0.15
1954	363	838	143	22	0.17	0.03	7.7	0.16
1955	139	293	198	29	0.68	0.10	7.6	0.15
1956	176	354	197	32	0.56	0.09	7.6	0.16
1957	113	218	127	22	0.58	0.10	7.9	0.17
1958	84	175	101	15	0.58	0.09	7.6	0.15
1959	97	197	118	17	0.60	0.09	7.5	0.14

Table 6.--Legal wild brook trout caught in Fuller Creek, 1940-1959

Year	Total fishing		Total catch		Catch per hour		Average size	
	Trips	Hours	Number	Pounds	Number	Pound	Length (inches)	Weight (pound)
1940	20	36	16	3	0.44	0.08	...	0.19
1941	59	97	21	3	0.22	0.03	...	0.15
1942	31	39	11	2	0.28	0.05	8.3	0.18
1943	19	25	19	3	0.76	0.12	7.6	0.14
1944	96	145	61	8	0.42	0.06	7.6	0.15
1945	102	159	64	9	0.40	0.06	7.5	0.14
1946	223	278	56	8	0.20	0.03	7.4	0.14
1947	212	219	27	4	0.12	0.02	7.5	0.14
1948	190	196	31	5	0.16	0.03	7.7	0.16
1949	115	296	43	6	0.15	0.02	7.4	0.13
1950	107	185	12	2	0.06	0.01	7.6	0.16
1951	110	246	59	9	0.24	0.04	7.6	0.16
1952	85	221	64	10	0.29	0.05	7.6	0.15
1953	86	212	84	14	0.40	0.07	7.8	0.16
1954	99	201	68	11	0.34	0.05	7.7	0.16
1955	110	214	68	10	0.32	0.05	7.6	0.14
1956	230	476	192	35	0.40	0.07	8.0	0.18
1957	179	377	76	12	0.20	0.03	7.6	0.15
1958	159	332	71	11	0.21	0.03	7.7	0.16
1959	126	234	70	11	0.30	0.05	7.6	0.16

Types of lures used

The 1959 catch is summarized in Table 7 according to the lures on which these fish were captured. Waters of the area were grouped into three categories based on the habitat type and/or fishing regulations applying.

On streams (Sections B, C, D, and Fuller Creek) anglers used worms or worms and spinner on 87 percent of their trips. These lures accounted for 78 percent of the catch. Only 5 percent used artificial lures or a combination of methods. These anglers caught 8 percent of the trout. As in 1958 anglers who used worms and spinner, minnows, insects, or a combination of methods were more successful than those who used worms or flies exclusively. The difference probably results from the fact that less experienced anglers often fish exclusively with worms, and that it is extremely difficult to fish Sections B, C, D and Fuller Creek with a fly.

On pond waters (Section D Pond, Fuller Creek Pond, East Fish Lake) anglers used worms or worms and spinner on 53 percent of the trips. These lures accounted for 43 percent of the catch. Artificial lures or a combination of methods were used on 39 percent of the trips, and accounted for 49 percent of the catch. Success with artificial lures or with a combination of methods was greater than for worms alone. The greater usage, on pond waters, of artificial lures or a combination of methods, resulted mainly from use of these in rainbow trout fishing at East Fish Lake.

Fly fishermen caught 0.60 trout per hour from the flies-only sections of Hunt Creek, 0.26 trout per hour on the pond waters, and 0.13 trout per hour from the stream sections open to any-lure fishing. This success pattern is similar to previous years, and probably is due to the combined factors of trout population densities and ease of fly fishing as related to the bank and underwater obstructions.

Table 7.--A comparison of different fishing lures showing frequency of use, numbers of trout caught, and catch per hour, Hunt Creek Trout Research Station, 1959

Water	Lure	Number of angler trips	Percentage of total trips	Number of trout caught	Percentage of total catch	Number of hours fished	Average catch per hour
Streams (Section B,C,D, stream and Fuller Creek)	Worms	369	69.4	178	54.1	671.5	0.27
	Worms and spinners	92	17.3	77	23.4	149.0	0.52
	Flies	23	4.3	4	1.2	32.0	0.13
	Minnows	19	3.6	43	13.1	33.0	1.30
	Insects	1	0.2	0	0.0	1.5	0.00
	Artificial lure	7	1.3	1	0.3	5.5	0.18
	Combination	21	3.9	26	7.9	43.0	0.60
	Total	532	100.0	329	100.0	935.5	0.35
Stream (Section Z and A)	Flies only	193	100.0	242	100.0	405.0	0.60
Ponds (Section D pond, Fuller Pond and East Fish Lake)	Worms	256	45.4	162	38.4	762.0	0.21
	Worms and spinners	42	7.5	18	4.3	150.5	0.12
	Flies	43	7.6	26	6.2	100.0	0.26
	Minnows	3	0.5	6	1.4	6.5	0.92
	Insects	1	0.2	5	1.2	4.0	1.25
	Artificial lure	74	13.1	63	14.9	186.5	0.34
	Natural lure	1	0.2	0	0.0	5.0	0.00
	Combination	144	25.5	142	33.6	376.0	0.38
	Total	564	100.0	422	100.0	1,590.5	0.27

Number of trout caught per trip

Table 8 summarizes the catch from waters under two different creel and size limits. These data were tabulated to serve as a source of information on numbers of trout caught per trip, and as indices for evaluating possible changes in angling brought about by changes in regulations or changes in the species combinations of the experimental waters.

On waters with a daily creel limit of 10 trout and a minimum size of 7 inches, anglers creeled 6 or more trout on only 2.2 percent of the trips; however these trips accounted for 21.8 percent of the total season's catch of these waters. Thirty-one percent of the angler trips took 1 to 5 trout per trip, and these trips accounted for 78.2 percent of the total catch. No trout were caught on 67 percent of the angler trips. The catch from the stream sections of the drainage was composed mostly of wild fish. The distribution of the catch in numbers of trout per trip was similar to that noted for 1958.

From waters with a daily creel limit of five trout and a size limit of 10 inches, the anglers took limit catches on 3.6 percent of the trips. No fish were taken on 65 percent of the trips, thus 35 percent of the trips accounted for the total catch from these waters. Successful trips increased 13 percent over 1958. Further, considering the 50 percent increase in the numbers of trips to these waters, anglers in 1959 experienced much better success. Hatchery-reared trout composed about 80 percent of the catch from these waters.

Age composition of wild trout

The age composition of the wild brook trout and wild rainbow trout taken from Hunt Creek by angling in 1959 is summarized in Table 9. Separate tabulations were made for the brook trout creeled in the flies-only sections (Z and A), the any-lure stream sections (B, C, D, and Fuller Creek), and the any-lure beaver pond of Section D.

Table 8.--Number and percentage of fishing trips on which different numbers of trout were caught, Hunt Creek Trout Research Station, 1959

Number of trout caught per trip	Daily creel limit[1] 10 trout, 7 inches		Daily creel limit[2] 5 trout, 10 inches	
	Number of trips	Percentage of total trips	Number of trips	Percentage of total trips
0	543	66.8	312	65.5
1	133	16.4	65	13.7
2	53	6.5	42	8.8
3	27	3.3	29	6.1
4	24	3.0	11	2.3
5	15	1.8	17	3.6
6	5	0.6	...	...
7	6	0.7	...	...
8	1	0.1	...	...
9	3	0.4	...	...
10	3	0.4	...	...
Total	813	100.0	476	100.0

[1] Experimental sections of Hunt Creek, also Fuller Creek.

[2] East Fish Lake, Fuller Creek Pond.

Table 9.--The age distribution of wild trout caught by anglers in Hunt Creek, 1959

Species	Stream section	Age group	Number of fish	Average length (inches)	Percentage of total catch
Brook	Z + A	I	4	7.2	1.7
		II	203	7.4	84.2
		III	34	8.0	14.1
Brook	B, C, D stream and Fuller Creek	I	1	7.0	0.3
		II	252	7.5	78.0
		III	68	8.4	21.0
		IV	2	9.7	0.6
Brook	D Pond	I	8	8.1	14.0
		II	45	9.4	78.9
		III	3	13.0	5.3
		IV	1	16.6	1.7
Rainbow	All waters	III	5	9.3	83.3
		IV	1	11.2	16.6

The catch from the stream waters had a similar age composition regardless of the lure restriction. Eighty-one percent of the catch was composed of age-group II brook trout (fish in their third growing season). Older trout made up 18 percent of the catch, and age-group I brook trout, one percent.

Age distribution (percentage) of brook trout caught in the Section D beaver pond was: I's--14; II's--79; III's--5; and IV's--2. Age-group I contributed less than usual to the 1959 pond catch, not because of poor growth, but more likely because this group of fish was below normal in abundance.

Six wild rainbow trout were caught in Hunt Creek during 1959. Five were fish in their fourth summer of life (III's), the other was a IV. These 6 rainbow trout were representatives of an almost extinct population resulting from spawning of rainbows stocked as fingerlings in the fall of 1952.

Residence of anglers

The residence of the anglers who made 1,289 fishing trips to the Area is summarized by county and by state in Table 10. As in previous seasons the majority of anglers fishing the Area reside in the southeastern counties of Michigan's Lower Peninsula. Local anglers from Montmorency and Oscoda counties supplied the second largest group, and the Saginaw Valley area the next largest. Ohioans made about 77 percent of the trips listed for nonresident anglers. Nonresidents made 6.8 percent of the total trips on the Area.

Type of fishing gear used

Recently interest was expressed in the type of fishing gear used by trout fishermen. The various types of gear used on the Hunt Creek waters in 1959 are listed in Table 11. The categories are based primarily on the type of reel used in conjunction with the rod. For example, a fly rod used with a spinning reel was classified as spinning gear; a spinning rod with a single action fly reel was

Table 10.--Residence of anglers fishing experimental waters of the Hunt Creek Trout Research Station, 1959

Residence (County)	Number of trips	Residence (County or state)	Number of trips
Montmorency	332	Lapeer	4
Wayne	234	Calhoun	3
Oakland	133	Berrien	2
Bay	76	Clinton	2
Ingham	68	Isabella	2
Genesee	66	Manistee	2
Macomb	34	Monroe	2
Saginaw	29	Muskegon	2
St. Clair	26	Ottawa	2
Oscoda	25	St. Joseph	2
Midland	25	Alpena	2
Lenawee	17	Eaton	1
Arenac	15	Gladwin	1
Jackson	15	Grand Traverse	1
Washtenaw	15	Total resident	1,201
Livingston	12	Ohio	68
Tuscola	9	Indiana	7
Kent	9	Pennsylvania	5
Gratiot	8	New York	4
Shiawassee	7	Illinois	2
Huron	6	Tennessee	2
Ionia	6	Total nonresidents	88
Kalamazoo	6	Grand total	1,289

Table 11.--Type of fishing gear used in the experimental waters of Hunt Creek Area, 1959

Experimental water	Trips using type of gear						Total trips
	Fly	Spinning	Casting	Cane pole	Combination	Unknown	
Streams							
(Section A, B, C, D, Z stream and Fuller Creek)	473	179	70	2	0	1	725
Ponds							
(Section D Pond, Fuller Pond and East Fish Lake)	132	295	82	0	52	3	564
Totals	605	474	152	2	52	4	1,289

classified as fly-fishing gear. In general, the majority of anglers fishing the stream sections used fly-fishing gear, whereas more anglers used spinning gear on pond waters. Casting rods with multiplying-action reels were a poor third on both types of water. The cane-poler is rare in this area; two trips out of the 1,289 observed utilized this traditional rod.

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